

The VCM Series

Quick Start Guide



by  **MOTORTRONICS**

Motortronics VCM Series

Thank you for purchasing this Motortronics VCM Series sensorless vector AC drive. When properly installed, operated and maintained, the VCM will provide a lifetime of reliable operation. It is mandatory that the person who operates, inspects and maintains this equipment thoroughly reads and understands this manual. This will insure safe and reliable operation of the controller.

This unit has been put through demanding tests at the factory prior to shipment. Before unpacking, check the following:

- Verify that the model number on the box matches your purchase order
- Inspect for possible damage (if damaged, notify the freight carrier and file a claim within 15 days of receipt)

After unpacking, please check the following:

- Verify the label specifications match your application requirement.
- Check all electrical connections and screws. Verify that there is no visible damage to any of the components.

WARNING!

Do not service equipment with voltage applied!

Unit can be a source of fatal electrical shock! To avoid shock hazard, disconnect main power and wait until the LED on the main control board goes out before working on the control. Warning labels (not supplied) must be attached to terminals, enclosure and control panel.

Unit does not provide overspeed protection or incorporate current limiting control.

To obtain optimum operation from your VCM Series sensorless vector AC drive, it is strongly recommended that this manual is read and understood.

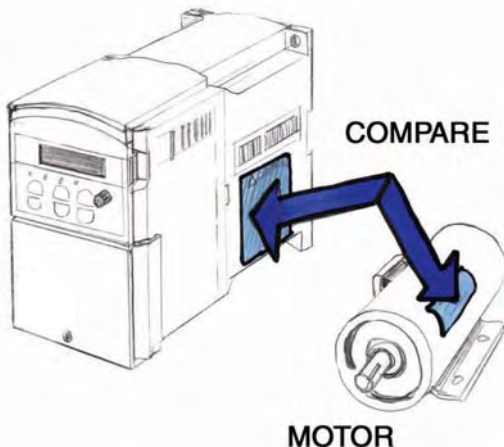
This guide provides step-by-step instructions to install your VCM Series drive.

1

Check Inverter Nameplate

Compare the AC Inverter nameplate Volts & Amps with the motor nameplate. The ratings should be the same.

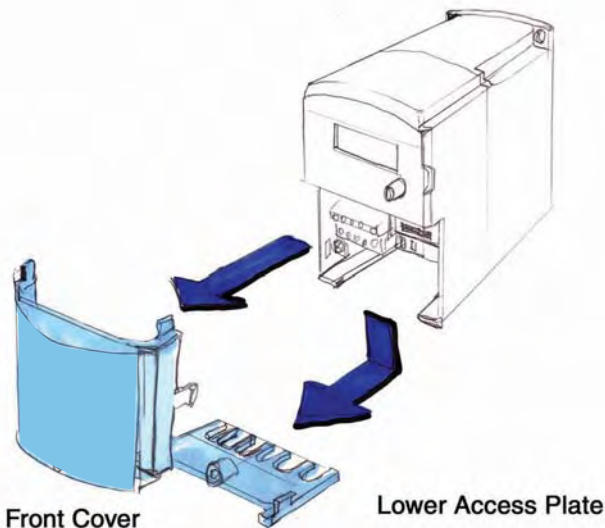
Caution: Motor or drive failure can result if the ratings do not match. Drive current rating must equal or be higher than the motor.





2

Remove Front Cover & Lower Access Plate



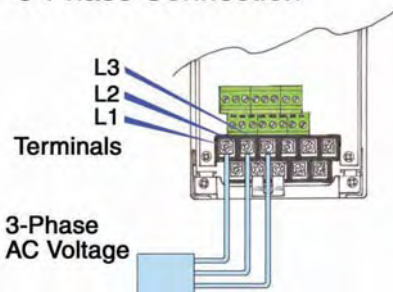
**3**

Connect AC Input Wire (1-Phase or 3-Phase to Power Terminal Strip

(This step requires installation by qualified personnel)

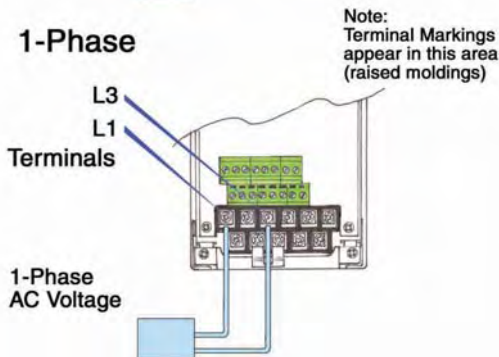
Locate the power terminal strip. Check the AC voltage rating shown on the Inverter nameplate with the AC incoming voltage.

3-Phase Connection



Caution:
Applying voltage higher than the rated VCM AC input voltage will damage the drive and could cause personal injury.

1-Phase





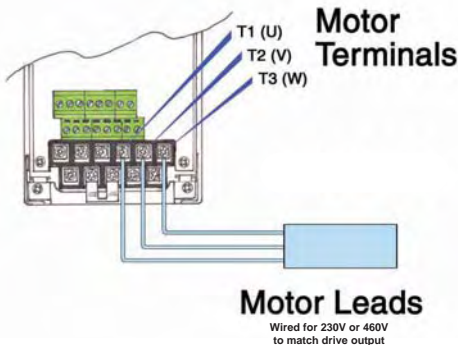
4

Connect Motor Leads to Terminal Strip

Check the motor leads to insure they are wired to match the 230 Volt or 460 Volt output as shown on the VCM inverter nameplate.

Caution: Applying higher than rated voltage will damage the motor.

**Check
Motor
Nameplate**





5

Apply AC Power

Apply AC power to the drive and observe the keypad.

A

Display Briefly Reads
AC INPUT VOLTAGE

Keypad



AC Volts
230
or
460

B

After 1 Second
Display Reads
SET FREQUENCY
0.500HZ (LOW RPM)

Keypad



05.00Hz

HZ LED
Remains
Lit

FWD LED
Blinks
ON and OFF

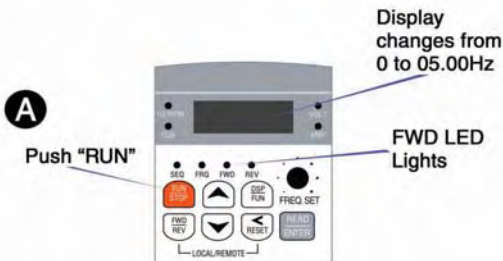




6

Start AC Inverter without Motor Load

This step is done without the motor connected to the machinery in order to prevent damage from reverse rotation of the motor shaft. If the motor is connected, do not apply any additional load to the machine.



B Check Motor Shaft Rotation



C If correct, push "STOP" button



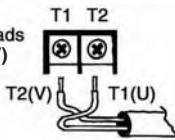
6 Continued...

D

IF WRONG DIRECTION



1) Push "STOP" Button

2) Remove AC Power
to the Inverter3) Wait until LED Display
turns OFF.4) Reverse Motor Leads
T1 (U) and T2 (V)**E**

1) Re-Apply AC Power



2) Push "RUN" Button



3) Check Motor Shaft Rotation

4) Push "STOP" Button to Stop
the Motor



7

Adjusting Drive Speed 60Hz Example:

- A** Drive Stopped
FREQ = 5Hz



- B** RESET
FREQ to 60Hz
(60Hz = Full Speed)

- 1) Select this location
by shifting left
with



When the 10's digit
is set to "6", the 1's digit
automatically sets to "0"
to avoid exceeding the
"Upper frequency limit"
(B005 = 60.00Hz)

- 2) Push UP arrow
until "6" is shown

- C** Push "ENTER"

- D** Push "RUN"

- E** Drive accelerates to 60Hz

- F** Stop the Drive






8



Setting the Motor Data

Keypad

Accessing Advanced Display

Press the  to select “Program” Mode (b000).



Use  to scroll up to (b011), then press  to display value (0000).

Press  once to change to (0001), then press  to record. Display reads (b011) and Advanced Display is accessible.









Programming Motor Parameters

A) Press  to select “Program” mode.

Display reads (bXXX). Press  3 times and  once to change to

(A001) “Motor Voltage.”

B) Press  to display value and use  and   to adjust to motor nameplate voltage. Press  to record value. Display should show (A001).

C) Press  to access (A002) “Motor Current” and repeat step B to program motor nameplate current. Display should show (A002)

D) Repeat for (A003) Motor nameplate HP (kw/0.746)

E) Repeat for (A004) Motor rated RPM

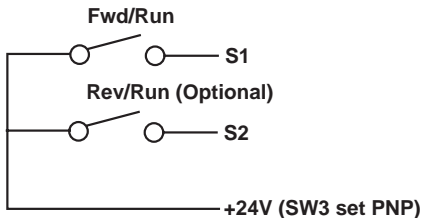
F) Repeat for (A005) Motor rated frequency (Hz)



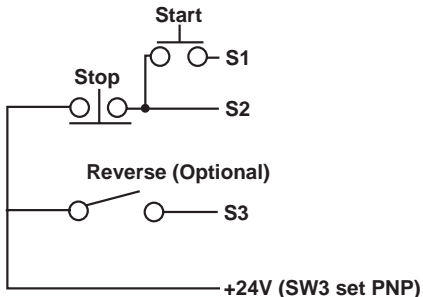
9

Alternate Control from Terminals:

2 Wire Control (b001 = 0000)



3 Wire Control (b001 = 0002)



**10**

You have successfully completed all the steps in the Quick Start Guide.

You are now ready to proceed to the VCM Instruction Manual to review installation, environmental operation, basic set-up adjustments, remote control and advanced adjustments that allow you to customize your drive to your application.